

## LUMINESCENT NANOMATERIAL POWDERS HAVING PREDETERMINED MORPHOLOGY AND METHOD OF MAKING

### ABSTRACT OF INVENTION

**[0039]** A method of making a luminescent nanomaterial having a plurality of nanoparticles. The luminescent nanomaterial includes at least one lanthanide group metal phosphate and at least one lanthanide series dopant, wherein each of the plurality of nanoparticles has a predetermined morphology. The luminescent nanomaterial has a high quantum efficiency and a high absorption value. The method yields a variety of morphologies and sizes of the plurality of nanoparticles. The particles size of the luminescent material varies from tens of nanometers to a few hundred of nanometers.